

A Hands-On Experience

*Learning and Development Simulation
Models*

by

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Halimah Hathah, Renata Scott and Musaad Alqahtani**

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Dedication

William J. Rothwell *dedicates this book to my wife Marcelina, my son Froilan Perucho, my daughter Candice Rothwell, my granddaughters Freya and Lina and my grandsons Aden and Gabrielle.*

Tehniyet Azam Ph.D. *dedicates this book to my teachers from Pre K to Doctoral level because of who I am and what I can achieve today.*

James Byrns *dedicates this work to my family, for your unwavering love, patience, and understanding throughout the writing process. Your encouragement during the challenging moments and your celebration of every milestone gave me the motivation to see this project through completion.*

Halimah Hathah *dedicates this contribution to her family, whose love, support, and encouragement have strengthened her throughout her academic and professional journey, including the completion of this book.*

Renata Scott *wishes to honor her family for their unwavering support throughout her professional journey in the creation of this book.*

Musaad Abdullah Alqahtani *dedicates this chapter to my family, whose unwavering love, encouragement, and sacrifices have been my greatest source of strength throughout my academic and professional journey. Their constant support has inspired me to pursue excellence and remain committed to lifelong learning. I also dedicate this work to everyone striving to build stronger organizations through the development of people and future leaders.*

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Preface

At 8:15 on a Monday morning, an instructional designer opens an inbox to find three urgent requests: a manager wants a course completed by Friday, a faculty member wants to convert a classroom program to blended delivery, and a senior leader wants proof that last month's training improved performance. By noon, stakeholders disagree about the real problem, the target audience, the available technology, and what success should look like. Knowing the names of the ADDIE phases or the principles of SAM is not enough. The designer must diagnose, decide, adapt, and explain those decisions with confidence. This book promises to help readers make that transition—from knowing instructional design models in theory to using them thoughtfully under the imperfect conditions of actual work.

That promise reflects a persistent problem in the preparation of instructional designers and learning experience designers. People are often introduced to Analysis, Design, Development, Implementation or Instruct, and Evaluation (ADDIE) and the Successive Approximation Model (SAM) through lectures, readings, diagrams, and examinations. These methods can explain terminology and sequence, but they do not necessarily prepare someone to respond when information is incomplete, stakeholders disagree, resources shrink, technology fails, or a sound solution does not transfer to the workplace. Professional competence develops when knowledge is used to make consequential decisions and when those decisions are examined afterward.

This book was written to provide that practice. Its central premise is straightforward: *people learn instructional design by doing instructional*

design. Readers analyze performance problems, weigh alternatives, collaborate with others, respond to changing conditions, and reflect on the consequences of their choices. The activities create a structured and psychologically safe environment in which judgment can develop before—or while—it is being applied to high-stakes projects.

The primary audience includes early-career instructional designers and learning experience designers, working learning and development teams and their managers, and faculty members or instructors who prepare others for instructional design practice. The book also serves talent development professionals, training managers, organization development practitioners, human resource development specialists, graduate students, and others responsible for improving learning and performance.

Early career instructional designers and learning experience designers can use the book to turn abstract models into repeatable professional habits. The simulations and incidents require them to ask better questions, distinguish training needs from other performance problems, align objectives with assessment and practice, anticipate implementation barriers, and plan meaningful evaluation. In university courses, internships, onboarding programs, or independent study, these experiences help newcomers build the confidence to explain not only what they recommend but why.

Learning and development teams can use the activities to rehearse difficult decisions, compare approaches, and develop a shared language for project work. A team designing a workforce program, converting instruction to blended delivery, responding to a client request, or improving an existing course can select the chapters that match its immediate challenge. Managers and team leaders can use cases, games, debriefings, and tools to onboard new staff, calibrate

practice across experienced staff, strengthen facilitation, and connect design choices to organizational results.

Faculty members, instructors, and program directors can use the book as a ready source of active-learning experiences for face-to-face, online, and hybrid courses. The tabletop simulations make design processes visible; the critical incidents create focused discussions of professional judgment; the instructional games provide integrative practice; and the checklists support applications beyond the classroom. Activities may be used in sequence as a course spine or selected individually to supplement instruction in instructional design, learning experience design, talent development, education, human resource development, or workplace learning.

These audiences work in varied contexts, and the book is designed accordingly. Its methods apply to higher education course design, online and blended programs, corporate and workforce training, government and nonprofit learning initiatives, military education, professional certification, and faculty or trainer development. Most activities can be facilitated onsite or online and can be adapted for intact teams, cohorts, graduate classes, workshops, or small-group professional development.

Although ADDIE and SAM are sometimes presented as competing approaches, this book treats them as complementary frameworks. ADDIE offers a systematic way to connect performance needs, learning objectives, development, delivery, and evaluation. SAM emphasizes collaboration, rapid prototyping, feedback, and successive refinement. Effective designers understand the logic of both and select or combine practices in response to the needs, risks, pace, and constraints of a particular project.

The distinguishing feature of this book is its use of three complementary forms of experiential learning: tabletop simulations, critical incidents, and instructional games. Tabletop simulations allow participants to work through realistic projects that unfold over time. Critical incidents concentrate attention on brief but consequential situations that demand judgment. Instructional games add opportunities for structured challenges, collaboration, feedback, and reflection. Each method develops a different aspect of professional competence, and together they move readers from explanation to application.

The book is organized into five parts.

Part I establishes the foundation by introducing tabletop simulations, critical incidents, instructional games, ADDIE, and SAM, and by explaining why experiential learning is especially well suited to developing instructional design competence.

Part II provides tabletop simulations for every phase of ADDIE—Analysis, Design, Development, Implementation or Instruct, and Evaluation—and for the three broad phases of SAM—Prepare, Iterative Design, and Iterative Development. These chapters ask participants to work collaboratively through authentic design problems, make decisions, and consider their effects on later work.

Part III presents corresponding critical incidents for the phases of ADDIE and SAM. The incidents are intentionally concise, allowing a class or team to examine difficult choices, compare alternative responses, and strengthen professional judgment without requiring an extended simulation.

Part IV turns to instructional games. Chapter 21 begins with three ten-minute, low-pressure warm-ups: a tiny critical incident, a tiny

tabletop activity, and a tiny instructional game. These unscored activities require no complicated roles and help participants become comfortable with experiential learning before they enter the comprehensive ADDIE game. Chapter 22 then provides a corresponding capstone game for SAM. Together, the two chapters integrate concepts from across the book while requiring collaboration, strategic thinking, adaptation, and reflection.

Part V contains ten practical tools: project and iteration checklists for ADDIE and SAM; checklists for analysis interviews, design, development, implementation, and evaluation; and specialized checklists for facilitating simulations, writing critical incidents, and designing games. Readers can use these tools during the book's activities and then adapt them for course design, blended programs, and workforce learning projects. Instructors may also invite participants to criticize and improve the tools as an exercise in transfer.

The book may be read from beginning to end, but it is intended primarily to be experienced. Think of it more as a workbook than a textbook. Newcomers will benefit from progressing sequentially from the foundations to the simulations, incidents, games, and tools. Experienced practitioners and teams may begin with the challenge that most closely resembles their current work. In either case, the debriefings are essential. Experience alone does not guarantee learning; reflection helps participants identify what guided a decision, what consequences followed, and what they would do differently in professional practice.

Instructional design exists to improve human performance. Every course, workshop, blended program, simulation, digital learning experience, coaching intervention, job aid, or performance support

system should help people perform more effectively. The aim of this book is therefore larger than mastery of two models. It is to help readers become reflective practitioners who can diagnose before prescribing, design with purpose, adapt without losing sight of outcomes, collaborate productively, and produce credible evidence of results.

If readers complete this book with improved skills to handle confusing requests, organize them thoughtfully, involve the necessary individuals, choose suitable design processes, and develop effective learning solutions in practice, then the book will have achieved its goal.

Acknowledgments

William wishes to thank those who worked on this project so diligently.

Halimah found co-authoring this book a valuable opportunity to bring together her academic knowledge and professional experience while contributing to a publication intended to reach readers across diverse global contexts. She wishes to express sincere gratitude to the faculty of the Workforce Education and Development program at The Pennsylvania State University for their guidance and support. She also extends her appreciation to the lead author and her fellow co-authors for their collaboration throughout this project.

Renata found that being a co-author of this book has been a meaningful milestone in my academic and professional journey. It represents the collective support, encouragement, and wisdom of many individuals, including faculty of the Workforce Education and Development Program at The Pennsylvania State University, who have shaped my development as a scholar and practitioner.

Musaad would like to express his sincere gratitude to his mentors, colleagues, collaborators, and students who have influenced his professional growth and inspired many of the ideas presented in this book. I am especially grateful to the organizations and professionals who continue to advance the fields of human resource development, organization development, and talent management through their commitment to research and practice. Finally, he extends his heartfelt appreciation to his family for their patience, encouragement, and unwavering support throughout this journey.

Advance Organizer

Complete the following organizer before you read the book.

Use this organizer to help assess what you already know—and what you most want to learn—about instructional design, learning experience design, tabletop simulations, critical incidents, instructional games, and the ADDIE and SAM instructional design models.

Instructions. Read each item listed below. Spend approximately 10 minutes reflecting on your current knowledge and professional development needs. For each topic, indicate your present level of knowledge by circling or marking a number from 1 (No Knowledge) to 5 (Highly Knowledgeable). When you finish, total your score and interpret the results using the guidelines provided at the end of the organizer. You may also wish to compare your responses with colleagues before beginning the book.

Level of Knowledge (1 = No Knowledge, 5 = Highly Knowledgeable)	I Would Like to Develop Myself in the Following Areas	Book Chapter	My Learning Goal or Question
1 2 3 4 5	Understanding simulation-based learning and experiential instructional design	Preface	_____ _____ _____

Level of Knowledge (1 = No Knowledge, 5 = Highly Knowledgeable)	I Would Like to Develop Myself in the Following Areas	Book Chapter	My Learning Goal or Question
1 2 3 4 5	Introducing tabletop simulations and their application to instructional design		1 _____ _____ _____
1 2 3 4 5	Understanding critical incidents as instructional methods		2 _____ _____ _____
1 2 3 4 5	Understanding instructional games and game-based learning		3 _____ _____ _____
1 2 3 4 5	Integrating simulations, critical incidents, and games to master ADDIE and SAM		4 _____ _____ _____
1 2 3 4 5	Conducting the Analysis phase of the ADDIE model		5 _____ _____ _____
1 2 3 4 5	Performing the Design phase of the ADDIE model		6 _____ _____ _____

Level of Knowledge (1 = No Knowledge, 5 = Highly Knowledgeable)	I Would Like to Develop Myself in the Following Areas	Book Chapter	My Learning Goal or Question
1 2 3 4 5	Developing instructional materials during the Development phase	7	_____ _____ _____
1 2 3 4 5	Implementing (Instructing) learning solutions effectively	8	_____ _____ _____
1 2 3 4 5	Evaluating instructional effectiveness	9	_____ _____ _____
1 2 3 4 5	Applying the Prepare phase of the SAM model	10	_____ _____ _____
1 2 3 4 5	Using Iterative Design within the SAM model	11	_____ _____ _____
1 2 3 4 5	Using Iterative Development within the SAM model	12	_____ _____ _____
1 2 3 4 5	Solving Analysis problems through critical incidents	13	_____ _____ _____

Level of Knowledge (1 = No Knowledge, 5 = Highly Knowledgeable)	I Would Like to Develop Myself in the Following Areas	Book Chapter	My Learning Goal or Question
1 2 3 4 5	Solving Design problems through critical incidents	14	_____ _____ _____
1 2 3 4 5	Solving Development problems through critical incidents	15	_____ _____ _____
1 2 3 4 5	Solving Implementation (Instruction) problems through critical incidents	16	_____ _____ _____
1 2 3 4 5	Solving Evaluation problems through critical incidents	17	_____ _____ _____
1 2 3 4 5	Solving Prepare problems through critical incidents	18	_____ _____ _____
1 2 3 4 5	Solving Iterative Design problems through critical incidents	19	_____ _____ _____

Level of Knowledge (1 = No Knowledge, 5 = Highly Knowledgeable)	I Would Like to Develop Myself in the Following Areas	Book Chapter	My Learning Goal or Question
1 2 3 4 5	Solving Iterative Development problems through critical incidents	20	_____ _____ _____
1 2 3 4 5	Learning the ADDIE model through an instructional game	21	_____ _____ _____
1 2 3 4 5	Learning the SAM model through an instructional game	22	_____ _____ _____
1 2 3 4 5	Using project checklists and professional instructional design tools	Tools	_____ _____ _____

Scoring and Interpretation

After completing the Advance Organizer, assign yourself **1 to 5 points** for each of the 24 topics.

1 = No Knowledge

2 = Limited Knowledge

3 = Moderate Knowledge

4 = Good Knowledge

5 = Highly Knowledgeable

Add the points for all 24 items to obtain your Total Score.

Possible Scores: 24–120

Remember that there are no right or wrong scores. The purpose of this organizer is to help you identify your current level of knowledge and establish personal learning goals before reading the book. The final column, "My Learning Goal or Question," should be used to record the specific knowledge, skills, or professional challenges you hope each chapter will address. After completing the book, return to this organizer to evaluate how well your learning goals were achieved.

Score Interpretation

24–48: Excellent Opportunity for Growth

You are beginning your study of instructional design, learning experience design, simulations, critical incidents, instructional games, and the ADDIE and SAM models. Read the book sequentially and complete every simulation, role play, critical incident, game, reflection, and application exercise. Doing so will provide a strong foundation for future instructional design work.

49–72: Developing Professional Competence

You already possess a basic understanding of many of the concepts presented in this book but have identified several areas for further development. Pay particular attention to the chapters corresponding to the topics you rated lowest. Compare your current practices with the approaches presented in the book and consider how they can strengthen your instructional design projects.

73–96: Strong Professional Foundation

You demonstrate considerable knowledge and experience in instructional design and learning experience design. Use simulations, critical incidents, instructional games, and project tools to refine your professional judgment, explore alternative approaches, and strengthen your ability to solve complex instructional design problems.

97–120: Advanced Knowledge and Expertise

You perceive yourself as highly knowledgeable across most of the topics covered in this book. Challenge yourself by completing every

activity, facilitating discussions with colleagues, comparing your solutions with those presented in the text, and experimenting with new approaches in your own professional practice. Even experienced instructional designers can discover new insights through reflection, collaboration, and application.

After Completing the Book

When you finish the book, return to this Advance Organizer and complete the following reflection:

Which learning goals did I achieve?

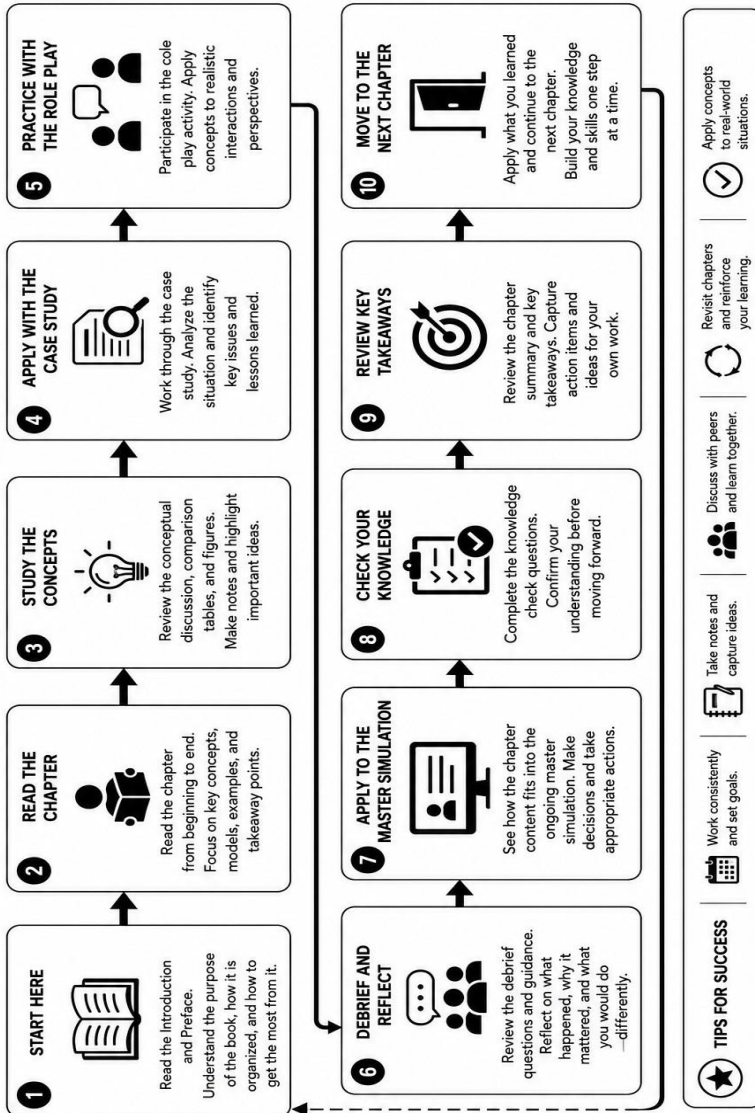
Which topics do I still need to strengthen?

Which simulations, critical incidents, instructional games, or tools were most valuable?

How will I apply what I have learned to improve my instructional design or learning experience design practice?

Your responses can serve as the basis for an individual professional development plan and may also be discussed with colleagues, instructors, mentors, or members of your instructional design team.

Figure F-1: The Learning Path Through the Book



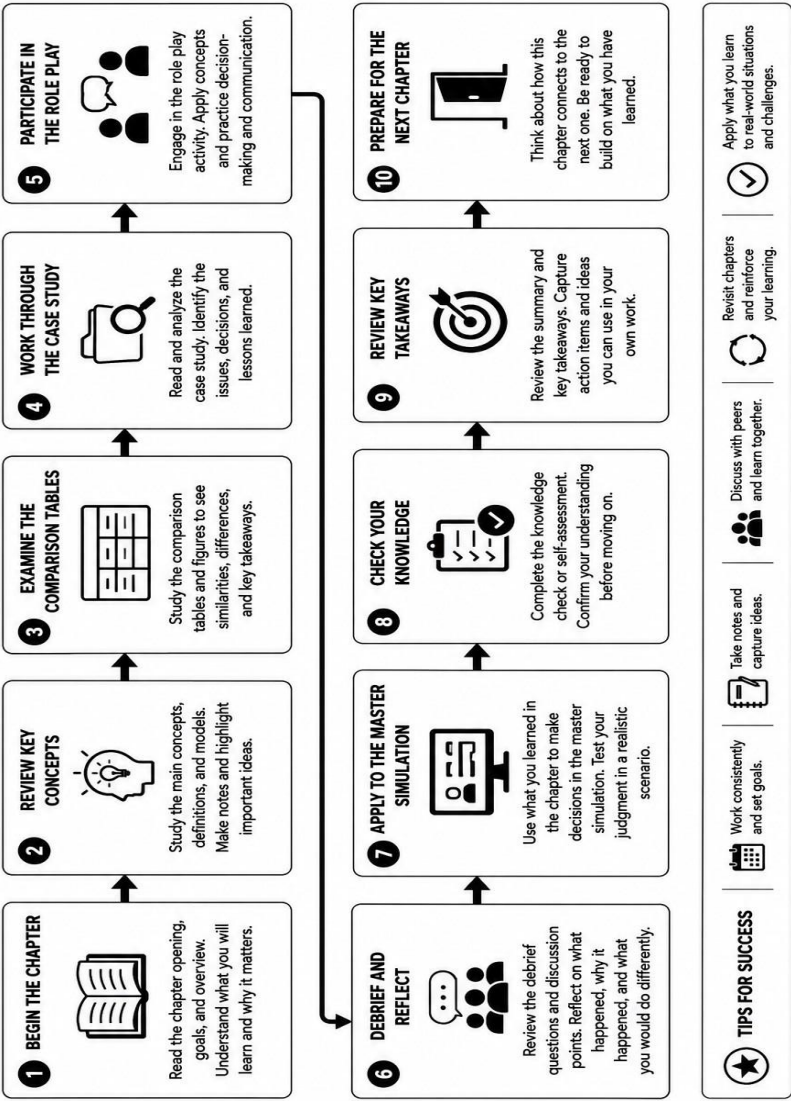
Part I

Foundations

Part I includes the following chapters:

- *Chapter 1:* Introducing Tabletop Simulations and the ADDIE/SAM Models
- *Chapter 2:* Introducing Critical Incidents and the ADDIE/SAM Models
- *Chapter 3:* Introducing Instructional Games and the ADDIE/SAM Models
- *Chapter 4:* How Instructional Designers Can Learn the ADDIE and SAM Models Through Tabletop Simulations, Critical Incidents, and Games

Figure I-1: How to Proceed Through the Simulation Chapters



Chapter 1

Introducing Tabletop Simulations and the ADDIE/SAM Models

Organizations today operate in environments characterized by rapid technological change, increasing complexity, and frequent uncertainty. As a result, educators and talent development professionals are seeking instructional approaches that prepare learners not only to remember information but also to apply knowledge, solve problems, collaborate with others, and make sound decisions under realistic conditions. Tabletop simulations have emerged as one of the most effective methods for achieving these goals because they allow participants to experience realistic situations in a safe, low-risk environment before confronting similar challenges in actual practice.

What Is a Tabletop Simulation?

A *tabletop simulation* is a structured learning activity in which participants work individually or in teams to analyze realistic scenarios, assume organizational roles, make decisions, respond to changing events, and evaluate the consequences of their actions. Unlike computer-based simulations, tabletop simulations typically rely on written case materials, event cards, facilitator prompts, discussion, and collaborative decision-making rather than sophisticated technology. Participants engage in authentic workplace situations that unfold over time, allowing them to practice critical thinking, communication, leadership, and problem-solving skills while receiving feedback from facilitators and peers (Fanning & Gaba, 2007; Salas et al., 2009).

Why Are Tabletop Simulations Important Now?

Tabletop simulations have become increasingly important in education and workplace learning because employers are demanding competencies that extend beyond factual knowledge. Modern organizations require employees who can work collaboratively, adapt to unexpected situations, evaluate incomplete information, and make effective decisions despite uncertainty. Traditional lecture-based instruction often provides conceptual understanding but offers limited opportunities to practice judgment and decision-making. Tabletop simulations bridge this gap by placing learners in situations that closely resemble workplace complexity while eliminating the risks associated with real-world mistakes. They have become widely used in healthcare, emergency management, military planning, business education, public administration, cybersecurity, and organizational leadership because they promote experiential learning, increase learner engagement, and improve knowledge transfer to actual job performance (Kolb, 1984; Salas et al., 2009). Tabletop simulations are also useful because preparing them is typically less costly and time-consuming than preparing and testing electronic simulations.

How Can Instructional Designers Use Tabletop Simulations?

Instructional designers can use tabletop simulations throughout the learning process to create authentic learning experiences that closely align with workplace performance requirements. Rather than teaching isolated concepts, instructional designers begin by identifying critical job tasks and performance challenges. They then develop realistic scenarios that require learners to apply knowledge, interpret information, prioritize alternatives, and justify their

decisions. Event cards, role descriptions, supporting documents, and facilitator guides allow the simulation to evolve dynamically as participants respond to changing circumstances. Debriefing sessions conducted after the simulation encourage learners to reflect on their decisions, compare alternative approaches, and connect their experiences to organizational practices and theoretical principles. In this way, simulations become powerful tools for developing higher-order thinking skills rather than simply reinforcing factual recall (Clark & Mayer, 2016; Fanning & Gaba, 2007).

How Can Tabletop Simulations Be Used with the ADDIE and SAM Models?

The systematic design of tabletop simulations is strengthened by instructional design models such as ADDIE and the SAM. The ADDIE model provides a structured framework that ensures simulations are carefully aligned with organizational goals and learner needs. (see Figures 1-1 and 1-2). During the **Analysis** phase, instructional designers identify performance problems, learner characteristics, and environmental constraints. During **Design**, they establish learning objectives, determine assessment methods, outline simulation activities, and prepare scenarios. The **Development** phase focuses on producing (as necessary or as desired) facilitator guides, participant materials, event cards, decision sheets, scoring rubrics, and other instructional resources. During **Implementation/Instruct**, facilitators conduct the simulation and manage participant interactions. Finally, **Evaluation** examines learner performance, participant reactions, organizational outcomes, and opportunities for improving future simulations through both formative and summative assessment (Branch, 2009; Molenda, 2015).